CLAIMS

1. A process for substantially maintaining damage to pathogen nucleic acid in a fluid containing pathogens and blood components comprising the steps of:

adding to the fluid a photosensitizer comprising riboflavin;

irradiating the fluid and photosensitizer with light at an appropriate wavelength to activate the photosensitizer to cause damage to the pathogen nucleic acid;

substantially maintaining the damage to the pathogen nucleic acid; and

wherein the damage to pathogen nucleic acid caused by the photosensitizer and light is substantially maintained during storage of the fluid after irradiation.

2. The process of claim 1 further comprising substantially maintaining the damage to the pathogen nucleic acid after transfusion into a recipient.

3. The process of claim 1 wherein the pathogen nucleic acid further comprises nucleic acid from undesirable cells and/or microorganisms.

4. The process of claim 1 further comprising adding a quencher to the fluid.

5. The process of claim 4 wherein the quencher further comprises a quencher selected from the group consisting essentially of glutathione, n-acetyl-cysteine, cysteine, adenine, histidine, tyrosine, tryptophan, ascorbate, vitimin E, trolox, TPGS and mixtures thereof.

6. The process of claim 1 further comprising adding to the fluid a solution containing additives to enhance blood component viability.

7. The process of claim 1 wherein the blood component further comprises platelets.

8. The process of claim 1 wherein the blood component further comprises red blood cells.

9. The process of claim 1 wherein the light used to irradiate the fluid and photosensitizer is in the UVB range.

10. The process of claim 1 wherein the riboflavin is added to the fluid at a final concentration of between about 50-500 μM.

11. A process for inactivating white blood cells which may be contained in a fluid comprising:

adding to the fluid containing white blood cells an effective amount of riboflavin;

exposing the fluid and riboflavin to light of an appropriate wavelength to activate the riboflavin and cause damage to the nucleic acid of the white blood cells; and

substantially maintaining the damage to the nucleic acids of the white blood cells to prevent re-activation of the white blood cells.

12. The process of claim 11 wherein the fluid further comprises red blood cells.

13. The process of claim 11 wherein the fluid further comprises platelets.

14. The process of claim 11 wherein the fluid further comprises plasma.

15. The process of claim 11 wherein the light to expose the fluid and riboflavin is in the UVB range.

16. The process of claim 11 wherein the riboflavin is added to the fluid at a final concentration of between about 50-500 μM.

17. A fluid suitable for transfusing into a patient comprising red blood cells treated by the process of claim 11.

18. A fluid suitable for transfusing into a patient comprising platelets treated by the process of claim 11.

19. A fluid suitable for transfusing into a patient comprising plasma treated by the process of claim 11.

20. A process for inactivating virus which may be contained in a blood product to be transfused into a patient comprising:

adding to the blood product containing virus an effective amount of riboflavin;

exposing the blood product and riboflavin to light of an appropriate wavelength to activate the riboflavin and cause damage to the nucleic acid of the virus; and

substantially maintaining the damage to the viral nucleic acids to allow for subsequent transfusion of the pathogen reduced blood product into a patient.

21. A process for providing pathogen reduced fluid containing blood or blood components suitable for re-infusion into a patient comprising:

damaging the nucleic acid of any pathogens which may be present with the blood or blood components;

adding riboflavin to the fluid containing blood or blood components and any pathogens; and

exposing the fluid to light to activate the riboflavin to maintain the nucleic acid damage of the pathogens.

22. The process of claim 21 wherein the step of exposing the fluid to light further comprises exposing the fluid to light in the UVB range.

23. The process of claim 21 wherein the riboflavin is added to the fluid at a final concentration of between about 50-500 μM.